

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method for the preparation of a supported polymerisation catalyst system, said method comprising combining

- (i) a porous support,
- (ii) a polymerisable monomer,
- (iii) a metallocene catalyst, and
- (iv) a cocatalyst,

~~wherein the polymerisable monomer is added to the porous support before addition of one or both of the metallocene catalyst and the cocatalyst.~~

(i) to (iv) are combined in the order of

(a) addition of the cocatalyst to the porous support,

(b) addition of the polymerisable monomer, and

(c) addition of the metallocene catalyst.

2. (Cancelled).

3. (Currently amended) A method according to claim 1 **[[or 2]]** wherein the polymerisable monomer is 1-hexene.

4. (Currently amended) A method according to claim 1 **[[or 2]]** wherein the polymerisable monomer is added to the porous support at 0.01 - 2 times the pore volume of the support.

5. (Cancelled).

6. (Currently amended) A method according to claim 1 ~~[[or 2]]~~ wherein the porous support is silica.

7. (Original) A method according to claim 6 wherein the silica is pretreated with an organometallic compound.

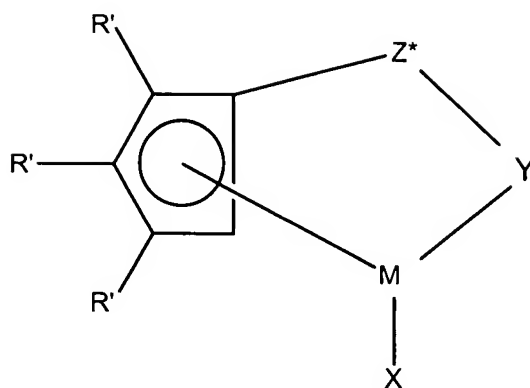
8. (Cancelled).

9. (Previously presented) A method according to claim 1 wherein the metallocene catalyst has the formula:



wherein Cp is a single cyclopentadienyl or substituted cyclopentadienyl group optionally covalently bonded to M through a substituent, M is a Group IVB metal bound in a  $\eta^5$  bonding mode to the cyclopentadienyl or substituted cyclopentadienyl group, X each occurrence is hydride or a moiety selected from the group consisting of halo, alkyl, aryl, aryloxy, alkoxy, alkoxyalkyl, amidoalkyl, and siloxyalkyl having up to 20 non-hydrogen atoms and neutral Lewis base ligands having up to 20 non-hydrogen atoms or optionally one X together with Cp forms a metallocycle with M and n is dependent upon the valency of the metal.

10. (Previously presented) A method according to claim 1 wherein the metallocene catalyst is represented by the general formula:



wherein:-

R' each occurrence is independently selected from hydrogen, hydrocarbyl, silyl, germyl, halo, cyano, and combinations thereof, said R' having up to 20 non-hydrogen atoms, and optionally, two R' groups (where R' is not hydrogen, halo or cyano) together form a divalent derivative thereof connected to adjacent positions of the cyclopentadienyl ring to form a fused ring structure;

X is a neutral  $\eta^4$  bonded diene group having up to 30 non-hydrogen atoms, which forms a  $\pi$ -complex with M;

Y is -O-, -S-, -NR<sup>\*</sup>-, -PR<sup>\*</sup>-,

M is titanium or zirconium in the + 2 formal oxidation state;

Z<sup>\*</sup> is SiR<sup>\*</sup><sub>2</sub>, CR<sup>\*</sup><sub>2</sub>, SiR<sup>\*</sup><sub>2</sub>, SiR<sup>\*</sup><sub>2</sub>, CR<sup>\*</sup><sub>2</sub>CR<sup>\*</sup><sub>2</sub>, CR<sup>\*</sup>=CR<sup>\*</sup>, CR<sup>\*</sup><sub>2</sub>SiR<sup>\*</sup><sub>2</sub>, or GeR<sup>\*</sup><sub>2</sub>,

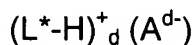
wherein:

R<sup>\*</sup> each occurrence is independently hydrogen, or a member selected from hydrocarbyl, silyl, halogenated alkyl, halogenated aryl, and combinations thereof, said

R<sup>\*</sup> having up to 10 non-hydrogen atoms, and optionally, two R<sup>\*</sup> groups from Z<sup>\*</sup> (when R<sup>\*</sup> is not hydrogen), or an R<sup>\*</sup> group from Z<sup>\*</sup> and an R<sup>\*</sup> group from Y form a ring system.

11. (Currently amended) A method according to claim 1 [[or 2]] wherein the cocatalyst is an aluminoxane.

12. (Currently amended) A method according to claim 1 [[or 2]] wherein the cocatalyst has the general formula:



wherein

$L^*$  is a neutral Lewis base

$(L^*-H)^+_d$  is a Bronsted acid

$A^{d-}$  is a non-coordinating compatible anion having a charge of  $d^-$ , and

$d$  is an integer from 1 to 3.

13. (Previously presented) A method according to claim 12 wherein the cocatalyst comprises a cation and an anion wherein the anion has at least one substituent comprising a moiety having an active hydrogen.

14. (Previously presented) A process for the polymerisation of olefin monomers selected from the group consisting of (a) ethylene, (b) propylene (c) mixtures of ethylene and propylene and (d) mixtures of (a), (b) or (c) with one or more other alpha-olefins, said process being performed in the presence of a supported polymerisation catalyst system prepared according to the method of claim 1.

15. (Previously presented) A process for the polymerisation of ethylene or the copolymerisation of ethylene and  $\alpha$ -olefins having from 3 to 10 carbon atoms, said process being performed under polymerisation conditions in the presence of a supported polymerisation catalyst system prepared according to the method of claim 1.

16. (Previously presented) A process according to claim 15 wherein the  $\alpha$ -olefin is 1-butene, 1-hexene, 4-methyl-1-pentene or 1-octene.

17. (Previously presented) A process according to any one of claims 14 to 16 performed in the solution, slurry or gas phase.

18. (Previously presented) A process according to any one of claims 14 to 16 performed in a fluidised bed gas phase reactor.

19. (New) A method for the preparation of a supported polymerisation catalyst system, said method comprising combining

- (i) a porous support,
- (ii) a polymerisable monomer,
- (iii) a metallocene catalyst, and
- (iv) a cocatalyst,

wherein the polymerisable monomer is added to the porous support before addition of one or both of the metallocene catalyst and the cocatalyst and wherein the polymerisable monomer is added to the porous support at 0.01 - 2 times the pore volume of the support.

20. (New) A method according to claim 19 comprising the steps in order of

- (a) addition of the cocatalyst to the porous support,
- (b) addition of the polymerisable monomer, and
- (c) addition of the metallocene catalyst.

21. New) A method according to claim 19 wherein the polymerisable monomer is 1-hexene.

22. (New) A method according to claim 19 wherein the porous support is silica.

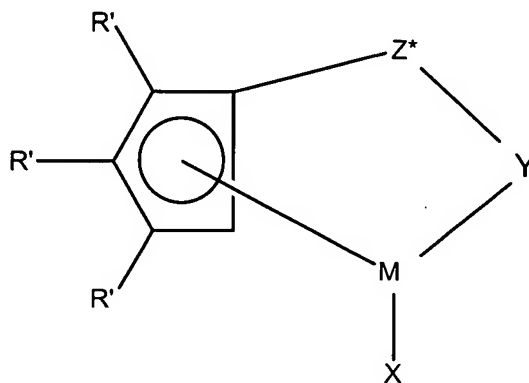
23. (New) A method according to claim 22 wherein the silica is pretreated with an organometallic compound.

24. (New) A method according to claim 19 wherein the metallocene catalyst has the formula:



wherein Cp is a single cyclopentadienyl or substituted cyclopentadienyl group optionally covalently bonded to M through a substituent, M is a Group IVB metal bound in a  $\eta^5$  bonding mode to the cyclopentadienyl or substituted cyclopentadienyl group, X each occurrence is hydride or a moiety selected from the group consisting of halo, alkyl, aryl, aryloxy, alkoxy, alkoxyalkyl, amidoalkyl, and siloxyalkyl having up to 20 non-hydrogen atoms and neutral Lewis base ligands having up to 20 non-hydrogen atoms or optionally one X together with Cp forms a metallocycle with M and n is dependent upon the valency of the metal.

25. (New) A method according to claim 19 wherein the metallocene catalyst is represented by the general formula:



wherein:-

R' each occurrence is independently selected from hydrogen, hydrocarbyl, silyl, germyl, halo, cyano, and combinations thereof, said R' having up to 20 non-hydrogen atoms, and optionally, two R' groups (where R' is not hydrogen, halo or cyano) together form a divalent derivative thereof connected to adjacent positions of the cyclopentadienyl ring to form a fused ring structure;

X is a neutral  $\eta^4$  bonded diene group having up to 30 non-hydrogen atoms, which forms a  $\pi$ -complex with M;

Y is -O-, -S-, -NR\*-, -PR\*-,

M is titanium or zirconium in the + 2 formal oxidation state;

Z\* is SiR\*<sub>2</sub>, CR\*<sub>2</sub>, SiR\*<sub>2</sub>, SiR\*<sub>2</sub>, CR\*<sub>2</sub>CR\*<sub>2</sub>, CR\*=CR\*, CR\*<sub>2</sub>SIR\*<sub>2</sub>, or GeR\*<sub>2</sub>,

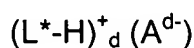
wherein:

R\* each occurrence is independently hydrogen, or a member selected from hydrocarbyl, silyl, halogenated alkyl, halogenated aryl, and combinations thereof, said

R\* having up to 10 non-hydrogen atoms, and optionally, two R\* groups from Z\* (when R\* is not hydrogen), or an R\* group from Z\* and an R\* group from Y form a ring system.

26. (New) A method according to claim 19 wherein the cocatalyst is an aluminoxane.

27. (New) A method according to claim 19 wherein the cocatalyst has the general formula:



wherein

$L^*$  is a neutral Lewis base

$(L^*-H)^+_d$  is a Bronsted acid

$A^{d-}$  is a non-coordinating compatible anion having a charge of  $d^-$ , and

$d$  is an integer from 1 to 3.

28. (New) A method according to claim 27 wherein the cocatalyst comprises a cation and an anion wherein the anion has at least one substituent comprising a moiety having an active hydrogen.

29. (New) A process for the polymerisation of olefin monomers selected from the group consisting of (a) ethylene, (b) propylene (c) mixtures of ethylene and propylene and (d) mixtures of (a), (b) or (c) with one or more other alpha-olefins, said process being performed in the presence of a supported polymerisation catalyst system prepared according to the method of claim 19.

30. (New) A process for the polymerisation of ethylene or the copolymerisation of ethylene and  $\alpha$ -olefins having from 3 to 10 carbon atoms, said process being performed under polymerisation conditions in the presence of a supported polymerisation catalyst system prepared according to the method of claim 19.

31. (New) A process according to claim 30 wherein the  $\alpha$ -olefin is 1-butene, 1-hexene, 4-methyl-1-pentene or 1-octene.

32. (New) A process according to any one of claims 29 to 31 performed in the solution, slurry or gas phase.

33. (New) A process according to any one of claims 29 to 31 performed in a fluidised bed gas phase reactor.